1. Calculate T, T2, Fwallx, and Fwally using the picture provided. The mass of the shelf is 50 kg.

FBD:

12 m

T = ?

2 m

14°

50 kg

8 m   2 m

Σ F$_X$:

T2 = ?

200 kg

Σ F$_Y$:

T =

T2 =

Fwallx =

Στ:
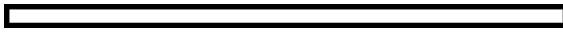
Fwally =

2. Calculate T, Fwallx, and Fwally using the picture provided.
    The mass of the shelf is 50 kg.   The mass of the jester is
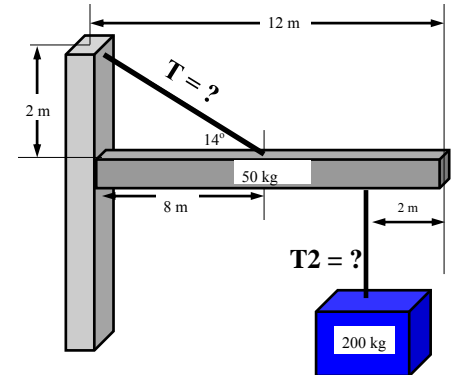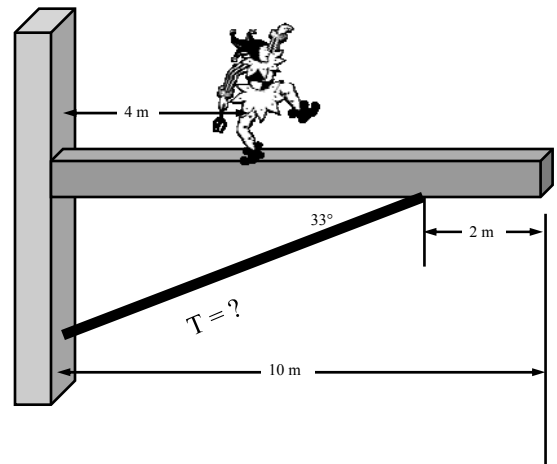   80 kg.

4 m

FBD:

33°   2 m

T = ?

10 m

Σ F$_X$:

Σ F$_Y$:

T =

Fwallx =

Fwally =

Στ:

3. A uniform 8 m long board (mass 25 kg) serves as a seesaw for two children, as shown in the figure. One child has a mass of 15 kg and sits 4.5 m from the pivot point on the left side of the board. A second child sits 3 m from the pivot point on the right side of the board. What is the mass of the second child? What is the force of the fulcrum
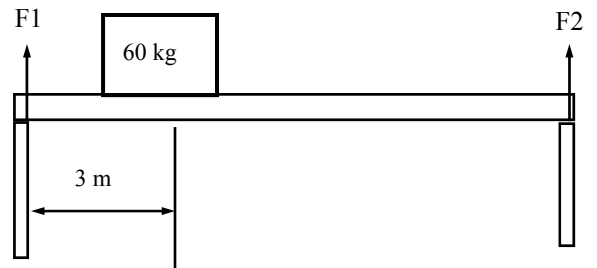
FBD:

4.5 m   3 m

15 kg   m = ?
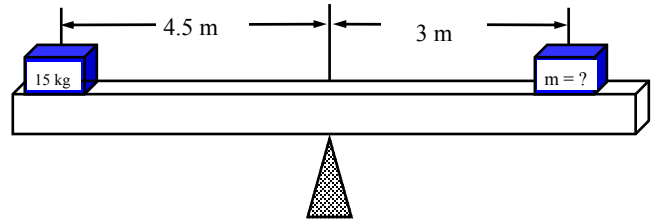
ΣF_Y:

$\Sigma \tau$:

Mass =

F_{ful} =

4. A uniform 50 kg beam, 8 m long, supports 60 kg box of gazelle toys. Calculate the force on each of the supports.
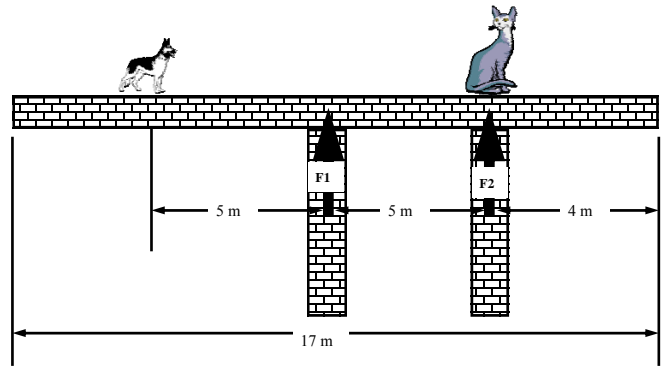
FBD:

F1   F2

60 kg

3 m

ΣF_Y:

$\Sigma \tau$:

F1 =

F2 =

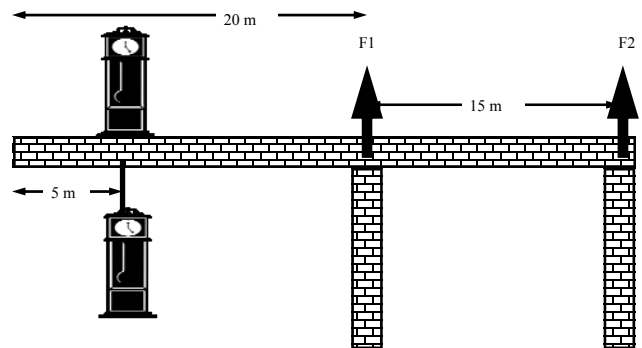5. A uniform 50 kg beam supports a 5 kg dog and a 12 kg cat. Calculate the force on each of the supports.

FBD:

F1

F2

5 m   5 m   4 m

17 m

Σ F_Y:

Στ:

F1 =

F2 =

6. In the following cantilever what are the values for F1 and F2? The beam has a mass of 2000 kg and each clock has a mass of 100 kg.

FBD:

20 m

F1   F2

15 m

5 m

Σ F_Y:

Στ:

F1 =

F2 =